

INTERNATIONAL SEARCH REPORT

PCT/IB2004/003849

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 B22D17/00 B22D17/20 B22D17/30 B22D17/02 B22D17/04

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 IPC 7 B22D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 347 889 A (KOMATSU ET AL) 7 September 1982 (1982-09-07) column 5 - column 8; claims 1,3; figures 1-5,8; examples 1,2 ----- US 4 842 038 A (FUJINO ET AL) 27 June 1989 (1989-06-27) column 3, line 14 - column 4, line 36; figure 1; table 1 ----- US 6 068 043 A (CLARK ET AL) 30 May 2000 (2000-05-30) column 5, line 30 - column 6, line 35; claim 1; figures 1,2 ----- -----	1-5, 10-15, 17,18
X		1-4,6,7, 10-13,17
X		1-4,6,7, 10-12,18

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

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- "O" document referring to an oral disclosure, use, exhibition or other means
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Date of the actual completion of the international search

28 February 2005

Date of mailing of the international search report

18.05.05

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INTERNATIONAL SEARCH REPORT

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 662 361 A (HITACHI METALS, LTD) 12 July 1995 (1995-07-12) figures 1,15-17; examples 1-9 -----	1-3,5-7, 10-14, 17,18
A	EP 0 710 515 A (REYNOLDS WHEELS INTERNATIONAL LTD) 8 May 1996 (1996-05-08) the whole document -----	6-8

INTERNATIONAL SEARCH REPORT

PCT/IB2004/003840

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
US 4347889	A	07-09-1982		JP 1166422 C JP 55094773 A JP 57060108 B DE 3000486 A1 FR 2446145 A1 GB 2040196 A ,B	08-09-1983 18-07-1980 17-12-1982 17-07-1980 08-08-1980 28-08-1980
US 4842038	A	27-06-1989		JP 1574442 C JP 2000148 B JP 62124061 A DE 3640370 A1 JP 1623725 C JP 2049821 B JP 63303671 A	20-08-1990 05-01-1990 05-06-1987 27-05-1987 18-11-1991 31-10-1990 12-12-1988
US 6068043	A	30-05-2000		NONE	
EP 0662361	A	12-07-1995		JP 3049648 B2 JP 8187566 A DE 69423596 D1 DE 69423596 T2 EP 0662361 A1 JP 11104804 A US 5579825 A	05-06-2000 23-07-1996 27-04-2000 19-10-2000 12-07-1995 20-04-1999 03-12-1996
EP 0710515	A	08-05-1996		IT B0940484 A1 AT 173419 T CA 2161923 A1 DE 69506075 D1 DE 69506075 T2 EP 0710515 A1 US 5900080 A	07-05-1996 15-12-1998 08-05-1996 24-12-1998 15-04-1999 08-05-1996 04-05-1999